

To: DeYoung, Robyn[DeYoung.Robyn@epa.gov]; Mulholland, Denise[Mulholland.Denise@epa.gov]
Cc: Patrick Luckow[PLuckow@synapse-energy.com]; Sarah Jackson[sjackson@synapse-energy.com]; Nidhi R. Santen[nrsanten@synapse-energy.com]
From: Jeremy Fisher
Sent: Mon 6/22/2015 6:36:12 PM
Subject: RE: State demonstration TSD checklist, sorted template
Checklist Requirements from State Plans 6-22-2015.xlsx

Robyn,

Here's my revised take on the table, based on our recent conversations. I've done a few things here.

1. Ordered the existing categories into a logical resource planning framework (unit specific data, system data, change in existing units, change in new units and credits).
2. Added in three new categories that seemed moderately fundamental.
 - a. Identify affected units.
 - b. Estimated emissions prices (if used)
 - c. EE/RE capacity factors (by tech type)
3. Differentiated between emissions standard rate w/ uniform or \leq state rate vs. state average rate plans, where mass and uniform emissions rate standard plans do not require a demonstration.
4. Filled in all of the categories to ensure that the requirements for all full demonstrations are uniform, as per our email discussion earlier.

I think that if this is true (i.e. that both state measures plans and emissions standards for rate (state avg) all require full demonstrations), that information should probably be reflected back in the rule text.

I'll give you a call in a few to see if I'm hitting the right direction

-Jeremy

<u>Emissions Standard</u>	<u>State Measures</u>	<u>Project CO₂ Perform</u>
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Description of Requirement	Mass	Rate (Uniform or ≤ State Rate)	Rate (State Avg.)	Rate	Mass	Demonstration
Identify affected units	Y	Y	Y	Y	Y	Y
Capacity (Annual, by EGU)			Y	Y	Y	Y
Identification of federally enforceable emissions standards (by EGU)			Y	Y	Y	Y
CO2 emissions rates (annual, by EGU)			Y	Y	Y	Y
Projected emissions limits/rates as a result of env. constraints (by EGU)			Y	Y	Y	Y
Heat Rates (by EGU)			Y	Y	Y	Y
Fuel Prices (by EGU?)			Y	Y	Y	Y
Document and explain variable O&M costs (by EGU?)			Y	Y	Y	Y
Document and explain fixed O&M costs (by EGU?)			Y	Y	Y	Y
Electric demand growth and basis (state)			Y	Y	Y	Y
Planning reserve margin (state)			Y	Y	Y	Y
Wholesale electricity prices (state or relevant hubs)			Y	Y	Y	Y
Emissions prices (if any, state or region)			Y	Y	Y	Y
Power purchase agreements and other long-term power contracts			Y	Y	Y	Y
Heat rate improvements (by EGU)			Y	Y	Y	Y
Fuel switching (by EGU)			Y	Y	Y	Y
Planned retirements (by EGU)			Y	Y	Y	Y
Planned new generation (by EGU)			Y	Y	Y	Y
EE/RE generation by technology-type (annual or compliance period)			Y	Y	Y	Y
EE/RE capacity factors & basis (by tech type)			Y	Y	Y	Y
Anticipated use of ERCs (annual, or compliance period)			Y	Y	Y	Y
Underlying assumptions used in the projections			Y	Y	Y	Y

From: DeYoung, Robyn [mailto:DeYoung.Robyn@epa.gov]
Sent: Monday, June 22, 2015 1:25 PM
To: Jeremy Fisher; Mulholland, Denise
Cc: Patrick Luckow; Sarah Jackson
Subject: RE: State demonstration TSD checklist, sorted template
Importance: High

Hi Jeremy,

Thanks for the update this morning. Denise and I need to reconcile which assumptions are needed for the projections for all state plan types, as well as which assumptions are unique to a particular state plan type. As I look at your table, I attempted to find an easy way to view these distinctions.

I filtered the "input/either/output" column and came up with this table below. This table represents what currently exists in the preamble but it seems it may be incomplete, as I would think we would want "Projected emissions limits/rates as a result of environmental constraints" to be in every state plan type.

Is there a way for you to propose a streamlined approach for the assumptions just related to the projections?

If you need to call me I'm working from home today [REDACTED]

*FOIA Exemption #6
personal phone information*

Description of Requirement	Emissions Standard		State Measures		Projected Demonstration?	
	Rate	Mass	Rate	Mass	CO ₂ Performance?	Input / Output?
CO ₂ Emissions Rates (Annual, by EGU)			Y	Y	Y	Input
Identification of federally enforceable emissions standards			Y	Y	Y	Input
Document and explain fixed O&M costs (by EGU?)			Y	Y	Y	Input
Document and explain variable O&M costs (by EGU?)			Y	Y	Y	Input
Fuel Prices (by EGU?)			Y	Y	Y	Input
Heat Rates (by EGU)			Y	Y	Y	Input
Projected emissions limits/rates as a result of			Y	Y	Y	Input

environmental constraints				
Planning reserve margin				Input
Underlying assumptions used in the projections				Input
Wholesale electricity prices				Either
Planned New Generation				Either
Fuel Switching (by EGU)	Y	Y	Y	Either
Planned Retirements	Y	Y	Y	Either
EE/RE generation by technology-type				Either
Heat Rate Improvements	Y			Either
Power purchase agreements and other long-term power contracts	Y			Either
Capacity (Annual, by EGU)	Y			Either
Electric demand growth and basis	Y			Input

From: Jeremy Fisher [mailto:jfisher@synapse-energy.com]
Sent: Friday, June 19, 2015 10:54 AM
To: DeYoung, Robyn; Mulholland, Denise
Cc: Patrick Luckow; Sarah Jackson
Subject: State demonstration TSD checklist, sorted template

Robyn and Denise,

I wanted to give a closer eye to the checklist, and firm up the question marks. There are three new tabs in the attached checklist:

Cheatsheet: a verified full list, with duplicates as shown on pages of the preamble. Marked w/ rate/mass and ES/SM, also marked for "used in performance demonstration" and "model input/output/either"

Cheatsheet-sorted: Suggested sort for clarity

Cheatsheet-short: consolidated common factors across rate/mass ES/SM. There are still a lot of inconsistencies in the preamble itself.

In general:

- Red markings are unknowns by me. Not clear if a statement is meant to apply to rate or mass specifically, or the actual phrase in the preamble is super ambiguous and could really use

some clarity.

- “Projected CO2 Performance Demonstration” is if a factor is key as part of the actual analysis that gets performed. Not just something that needs to be in the plan somewhere, but actually used in analysis.
- “Demonstration Input/Output” is a general guide on if the metrics are an input or an output of modeling, or either. Depending on the type of model used, a whole bunch of these factors could be legitimately considered outputs, and inevitably even inputs of some form are outputs of a different model somewhere else. So its sort of a tricky question. Also, some things like retirements or fuel switching could be the output of an economic model, or an input from utility or stakeholder perspectives. Also ambiguous. So I’m stating “either” for some of those.

Next steps:

- I think that there are a number of places where inconsistencies need to be ironed out. Happy to help.
- Maybe this table should be sorted into recommended steps associated with the actual TSD and marked as “required under preamble”, or “recommended in TSD.” Because the preamble doesn’t cover everything that you’d want (and sometimes maybe too much), but alone the cheatsheet doesn’t quite get the whole story across right now.

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